

ATTACHMENT NOT INCLUDED

MAY 30 1989

REPLY TO: 6T-AS

MEMORANDUM

SUBJECT: Radioactive Waste Generated at Cushing and Fansteel Sites

FROM: Terrie deLorimier
Acting Chief
State Programs Section (6T-AS)

TO: David N. Peters
Chief
Hazardous Waste Section (6E-SH)

Hank May of my staff has reviewed the data on radioactivity in the subject wastes, generated by EPA contractor FIT team sampling and investigative activities, accompanying your memorandum of February 2, 1989, (Fansteel site) and the memorandum of April 10, 1989 from Martha McKee. Following is our evaluation of the waste materials with respect to their classification as "radioactive" or "non-radioactive" wastes.

A review of the data and accompanying memoranda and other documentation indicates that the radioactive materials used/processed at both sites were primarily materials that are classified as "source materials." Source materials are defined (10 CFR 40.4b) as:

"(1) Uranium or thorium, or any combination thereof, in any physical or chemical form or (2) ores which contain by weight 0.05% or more of: Uranium, thorium, or any combination thereof" (10 CFR 40. 4. h)

Any waste contaminated with source material becomes low level radioactive waste (LLW) (See 10 CFR 61.2, "Waste"). However, the NRC has identified "unimportant quantities" of source material at 10 CFR 40.13(a) as "...any chemical mixture, compound solution, or alloy in which the source material is by weight less than 0.05% of the mixture...". But note that this provision only provides relief from licensing requirements as source materials. The waste is still LLW even if the concentration is less than 0.05%. There is no cutoff minimum concentration at which the waste becomes non-LLW. However, 10 CFR 40.22(a) provides an exemption if less than 15 pounds of source material is involved. However, this provision only provides relief from licensing requirements. Weight is calculated on the basis of its chemical form, i.e., includes the oxygen, if the compound is UO_x .

The documentation on the Cushing facility reflects that materials containing "low enriched uranium hexafluoride" (UF_6) were processed at Cushing.



- 2 -

Enrichment of uranium to any extent causes the uranium-containing material to be classified as "special nuclear material" 10 CFR 40.4.(1), and any waste contaminated with special nuclear material (SNM) becomes LLW. There is no exemption for LLW containing SNM, as there is for source material.

Again, at the Cushing facility, the data sheets indicate that material was processed which originated from the Climax uranium mill tailings. Any such material is classified as "byproduct material" and consequently any waste contaminated with "byproduct material" is LLW. As with SNM, there is no exemption as with source material.

The classification of uranium mill tailings as "byproduct material" is a relatively recent occurrence (45 FR 65531, Oct. 3, 1980) and is codified at 10 CFR 40.2a(b). (Note that the Climax mill is a Title II site.) There are no exempt quantity provisions as provided at 10 CFR 20.14 and 10 CFR 30.18 for previously designated byproduct materials.

Please refer any questions to Hank May at extension 7208. An appropriate contact at the Nuclear Regulatory Commission in Arlington, Texas is Mr. Chuck Cain, FTS 726-8186.

Attachment

cc: Ed Sierra GE-SH